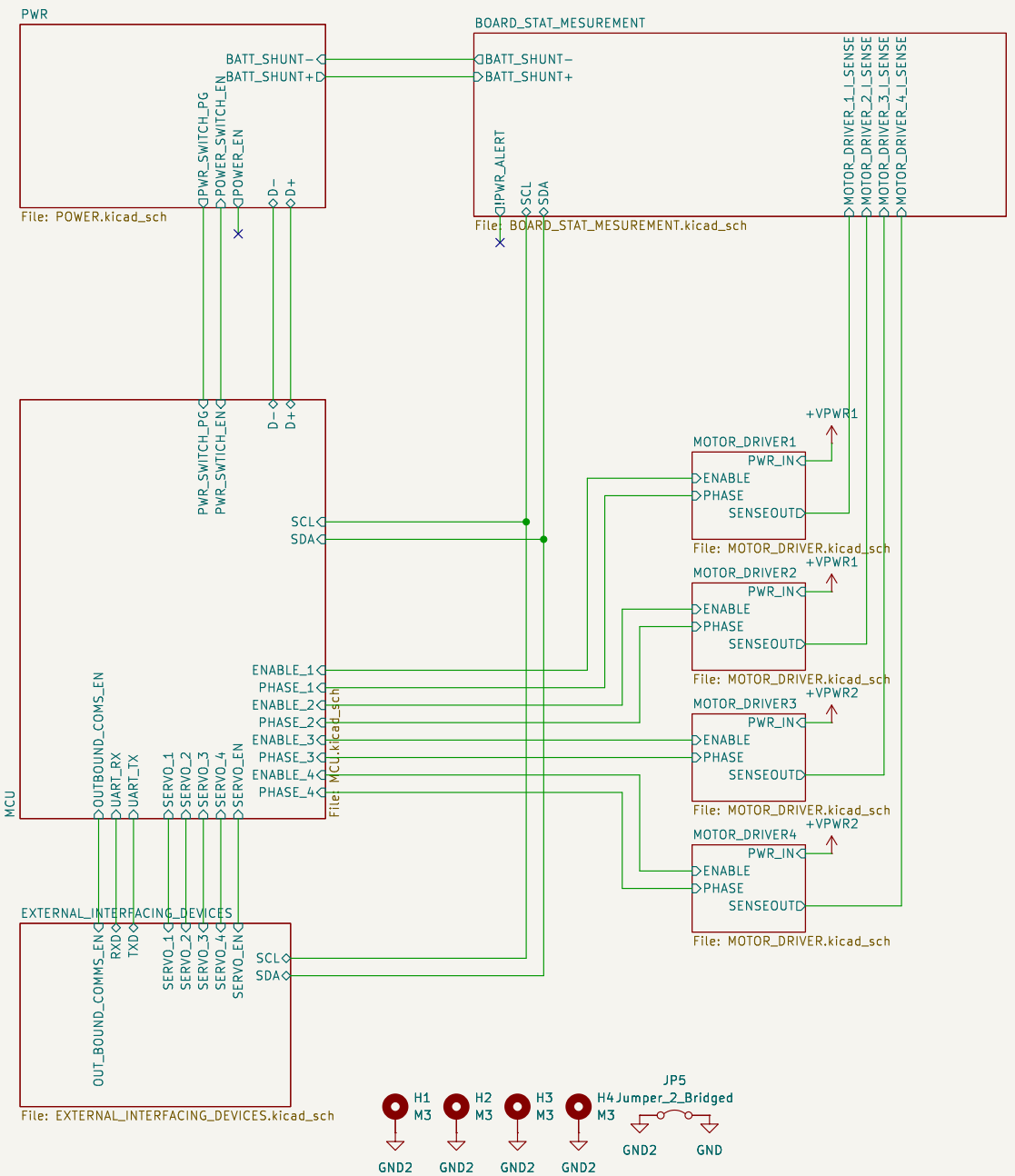

CHANGE LOG

Sheet: /		
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Size: A4	Date:	**Rev:**
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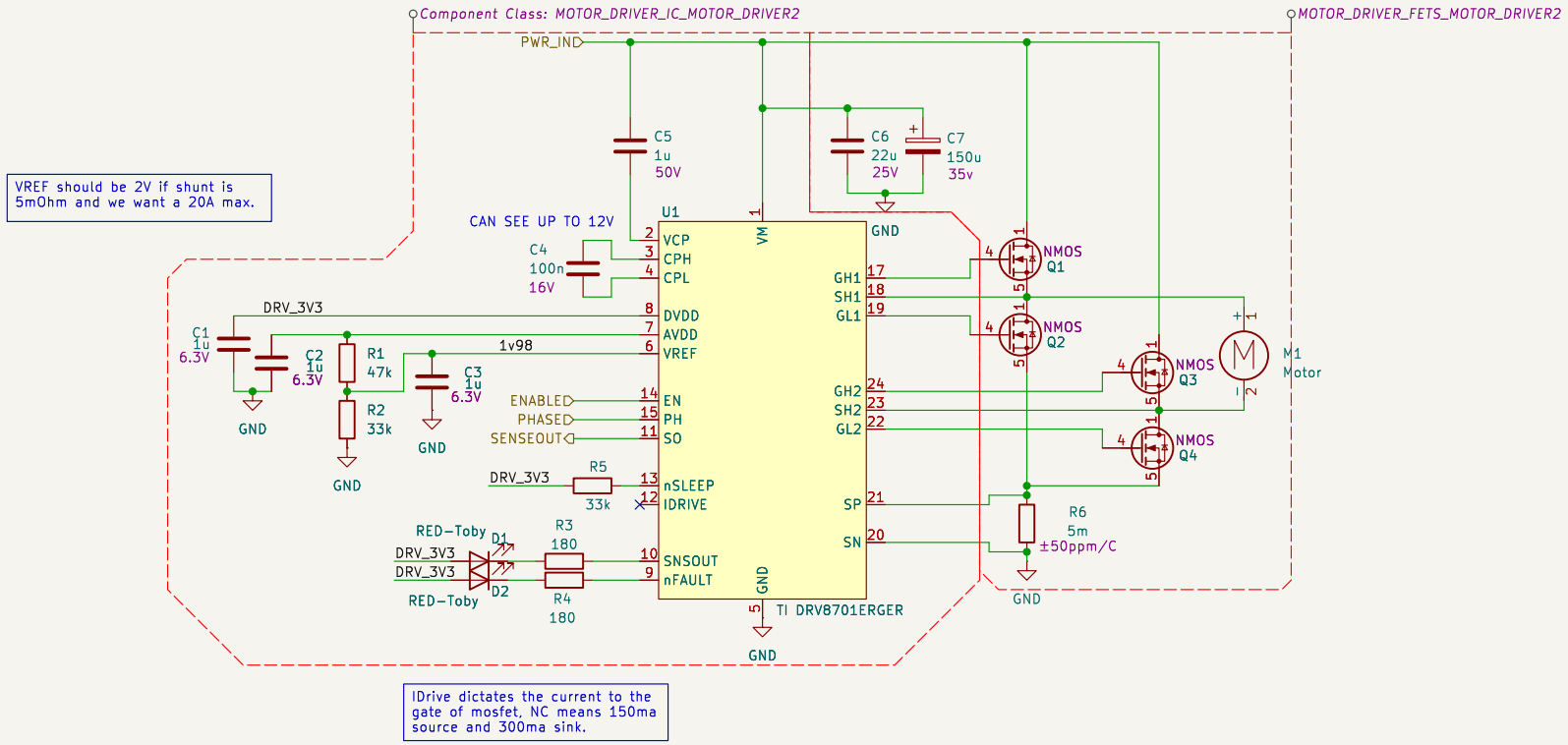

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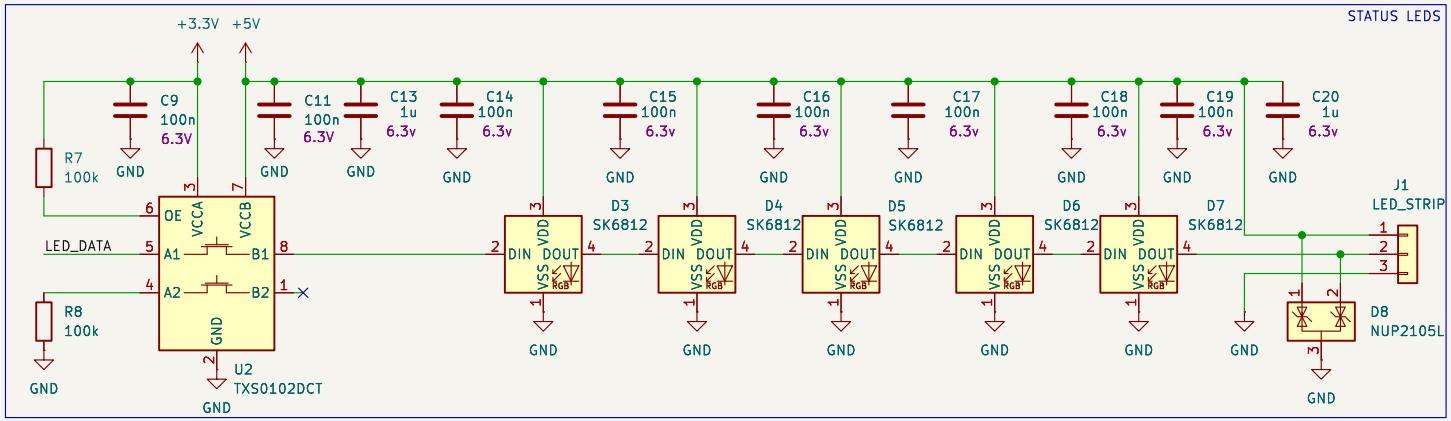
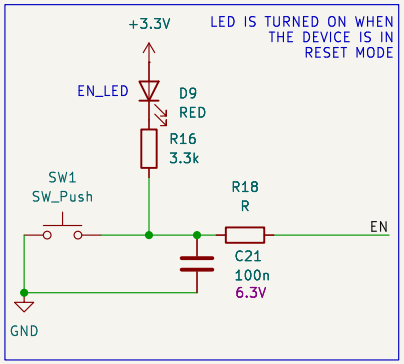
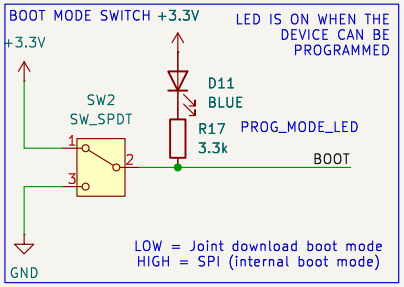
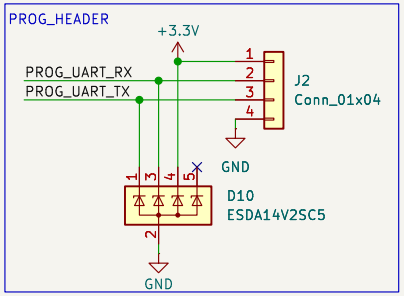
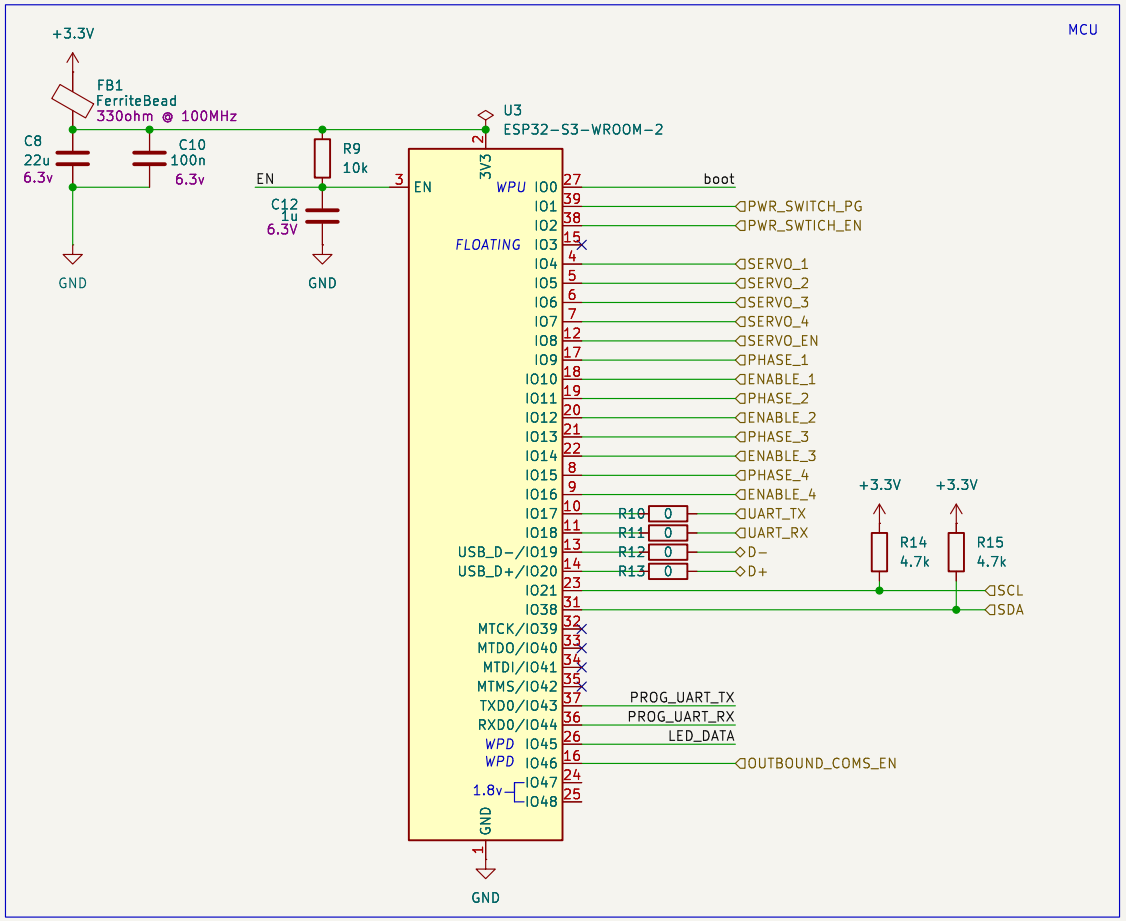
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.7		Id: 2/10











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Size: A4	Date:	**Rev:**
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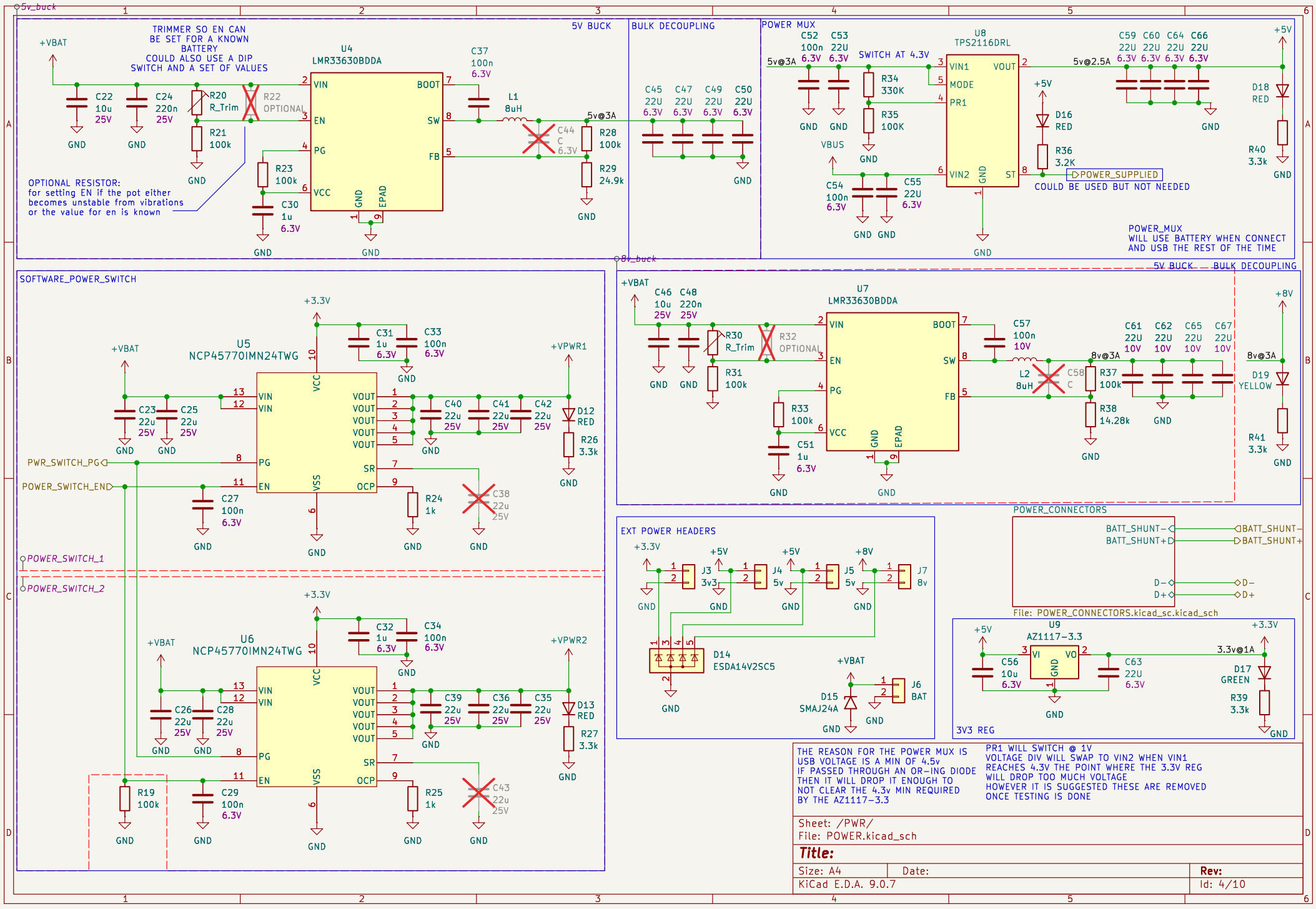
5v_buck
5V BUCK
BULK DECOUPLING
POWER MUX
TRIMMER SO EN CAN BE SET FOR A KNOWN BATTERY COULD ALSO USE A DIP SWITCH AND A SET OF VALUES
OPTIONAL RESISTOR: for setting EN if the pot either becomes unstable from vibrations or the value for en is known
U4 LMR33630BDDA
U8 TPS2116DRL
SWITCH AT 4.3V
5v@3A
5v@2.5A
POWER_SUPPLIED
COULD BE USED BUT NOT NEEDED
POWER_MUX WILL USE BATTERY WHEN CONNECT AND USB THE REST OF THE TIME
8v_buck
SOFTWARE_POWER_SWITCH
U5 NCP45770IMN24TWG
U6 NCP45770IMN24TWG
U7 LMR33630BDDA
8v@3A
PWR_SWITCH_PG
POWER_SWITCH_END
POWER_SWITCH_1
POWER_SWITCH_2
EXT POWER HEADERS
D14 ESDA14V2SC5
D15 SMAJ24A
POWER_CONNECTORS
BATT_SHUNT-
BATT_SHUNT+
D-
D+
File: POWER_CONNECTORS.kicad_sc.kicad_sch
U9 AZ1117-3.3
3.3v@1A
3V3 REG
THE REASON FOR THE POWER MUX IS USB VOLTAGE IS A MIN OF 4.5v IF PASSED THROUGH AN OR-ING DIODE THEN IT WILL DROP IT ENOUGH TO NOT CLEAR THE 4.3v MIN REQUIRED BY THE AZ1117-3.3
PR1 WILL SWITCH @ 1V VOLTAGE DIV WILL SWAP TO VIN2 WHEN VIN1 REACHES 4.3V THE POINT WHERE THE 3.3V REG WILL DROP TOO MUCH VOLTAGE HOWEVER IT IS SUGGESTED THESE ARE REMOVED ONCE TESTING IS DONE
Sheet: /PWR/
File: POWER.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. 9.0.7
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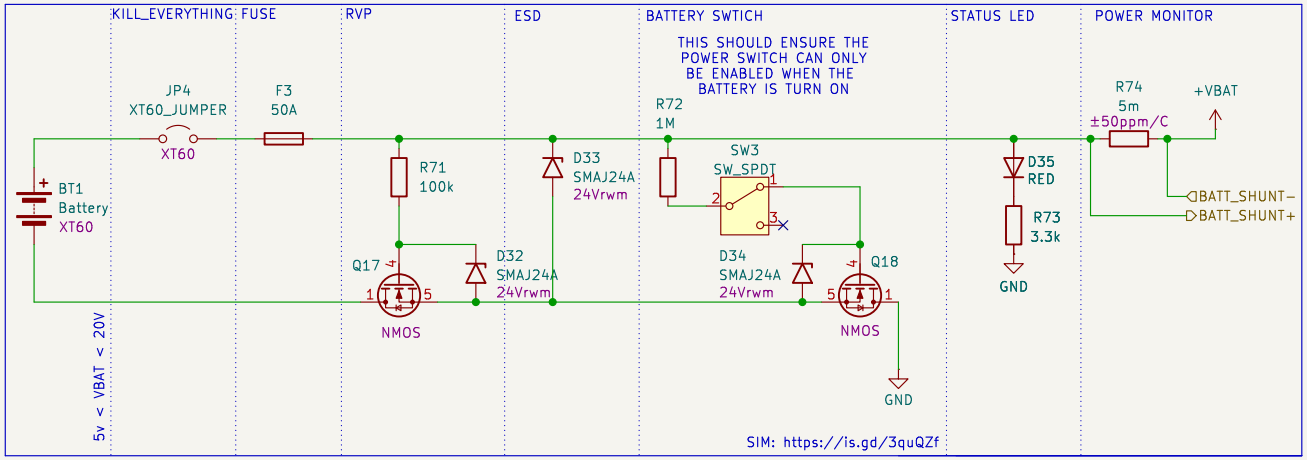

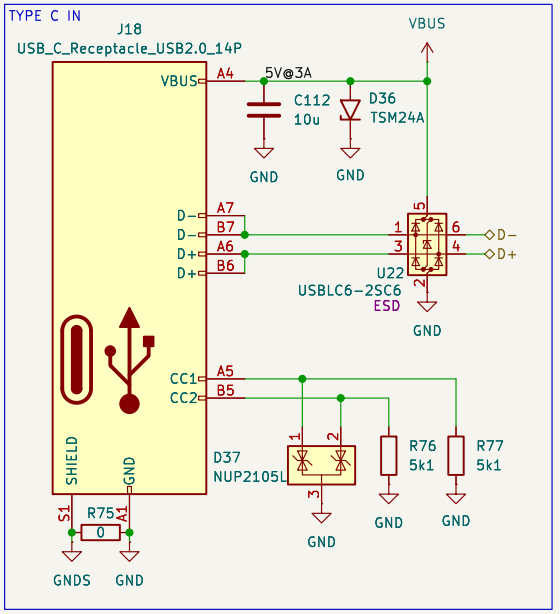

Sheet: /PWR/POWER_CONNECTORS/
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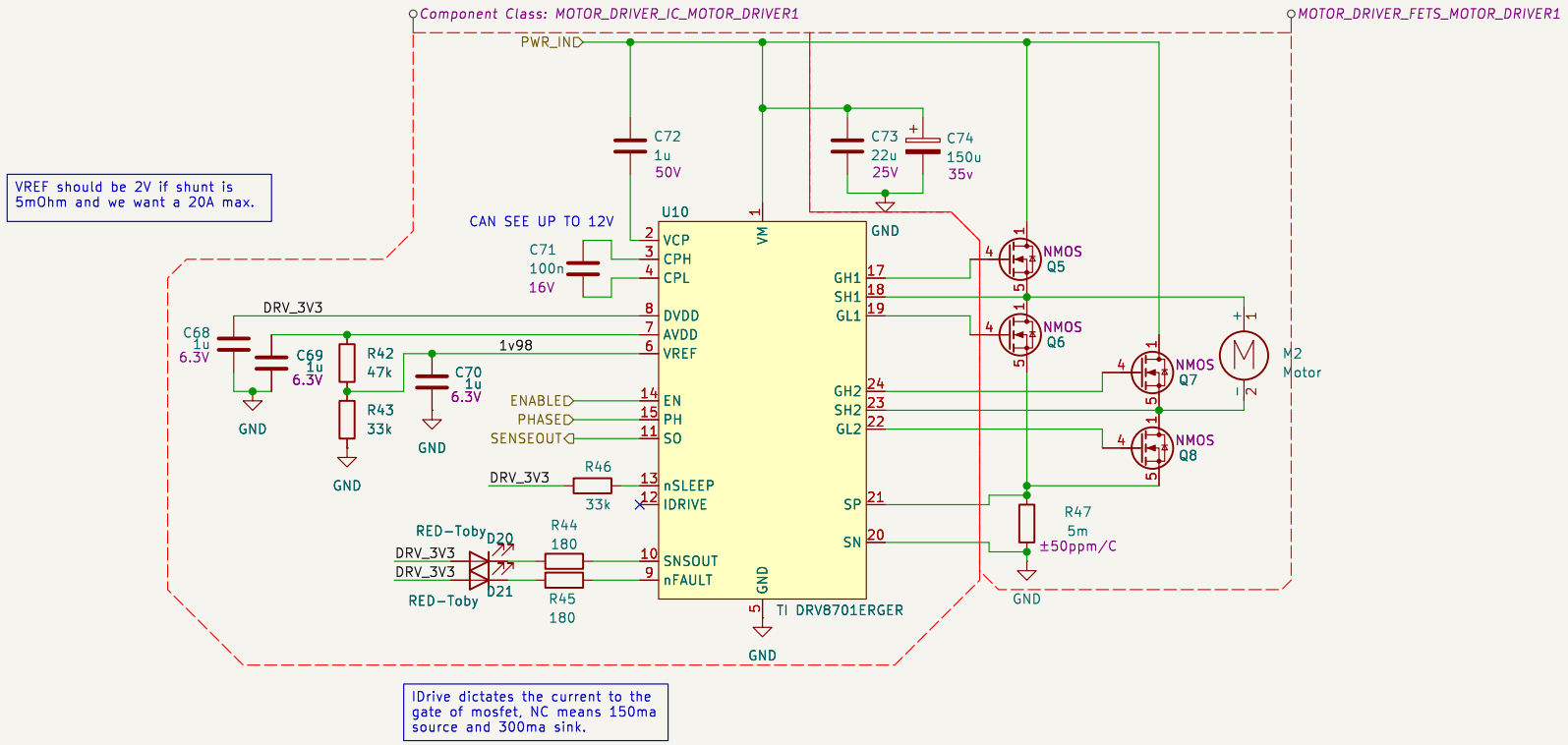
Component Class: MOTOR_DRIVER_IC_MOTOR_DRIVER1
MOTOR_DRIVER_FETS_MOTOR_DRIVER1
VREF should be 2V if shunt is 5mOhm and we want a 20A max.
PWR_IND
C72 1u 50V
C73 22u 25V
C74 150u 35v
CAN SEE UP TO 12V
C71 100n 16V
U10
VCP
CPH
CPL
VM
GND
DVDD
AVDD
VREF
GH1
SH1
GL1
NMOS Q5
NMOS Q6
NMOS Q7
NMOS Q8
M2 Motor
DRV_3V3
C68 1u 6.3V
C69 1u 6.3V
R42 47k
R43 33k
1v98
C70 1u 6.3V
ENABLED
PHASED
SENSEOUT
EN
PH
SO
GH2
SH2
GL2
R46 33k
nSLEEP
IDRIVE
SP
SN
R47 5m ±50ppm/C
RED-Toby
D20
D21
R44 180
R45 180
SNSOUT
nFAULT
TI DRV8701ERGER
IDrive dictates the current to the gate of mosfet, NC means 150ma source and 300ma sink.
Sheet: /MOTOR_DRIVER1/
File: MOTOR_DRIVER.kicad_sch
Title:
Size: A4
Date:
Rev:
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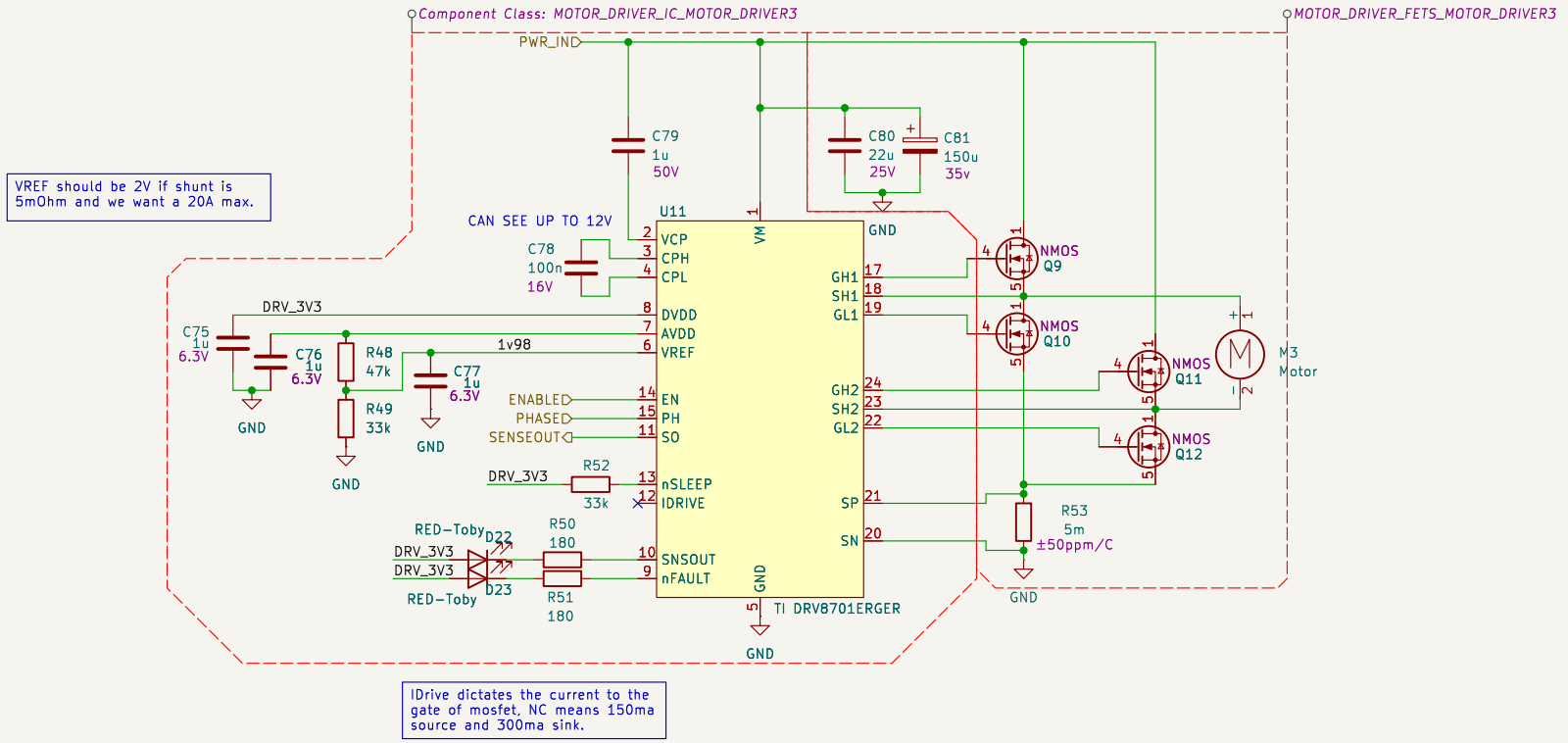

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Title:		
Size: A4	Date:	**Rev:**
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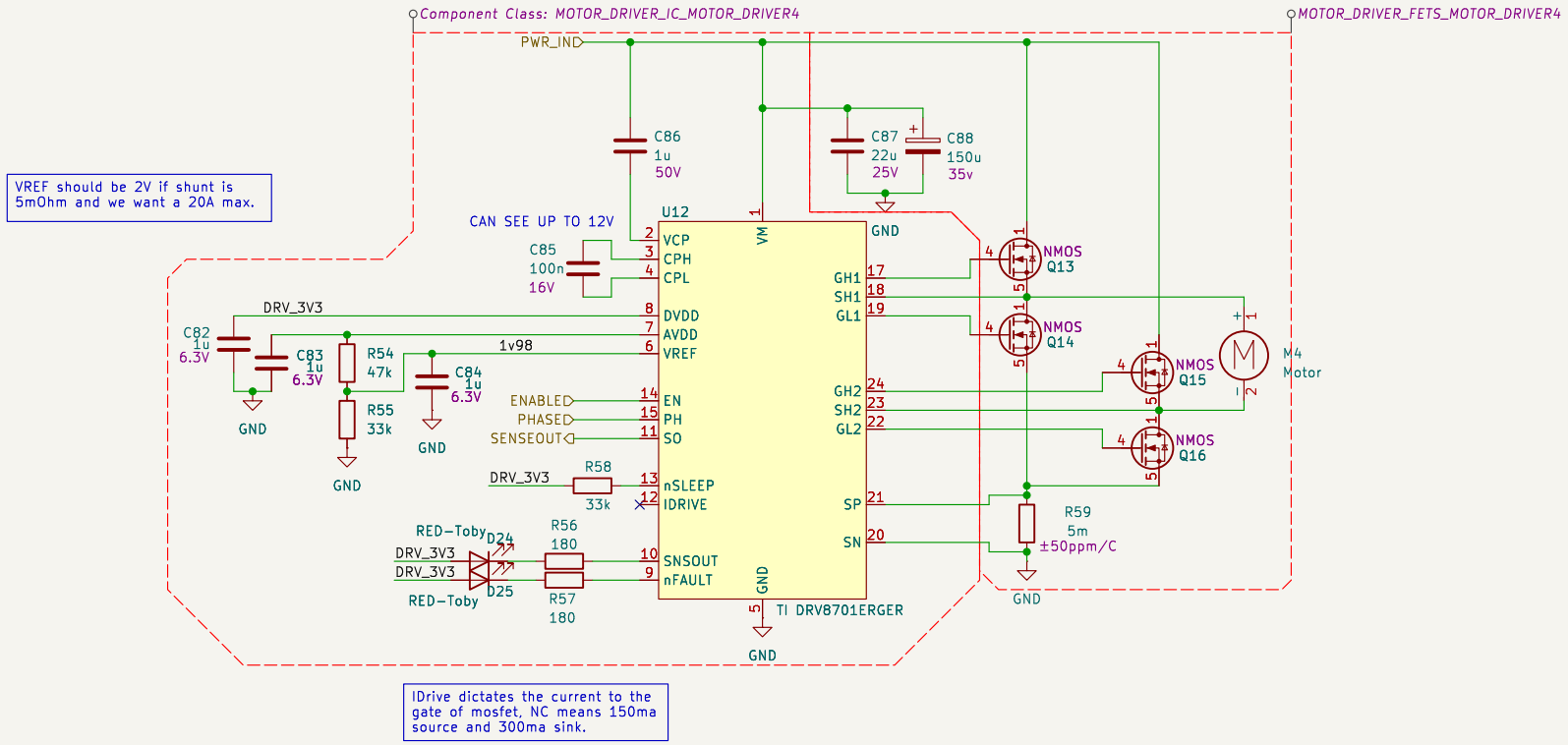
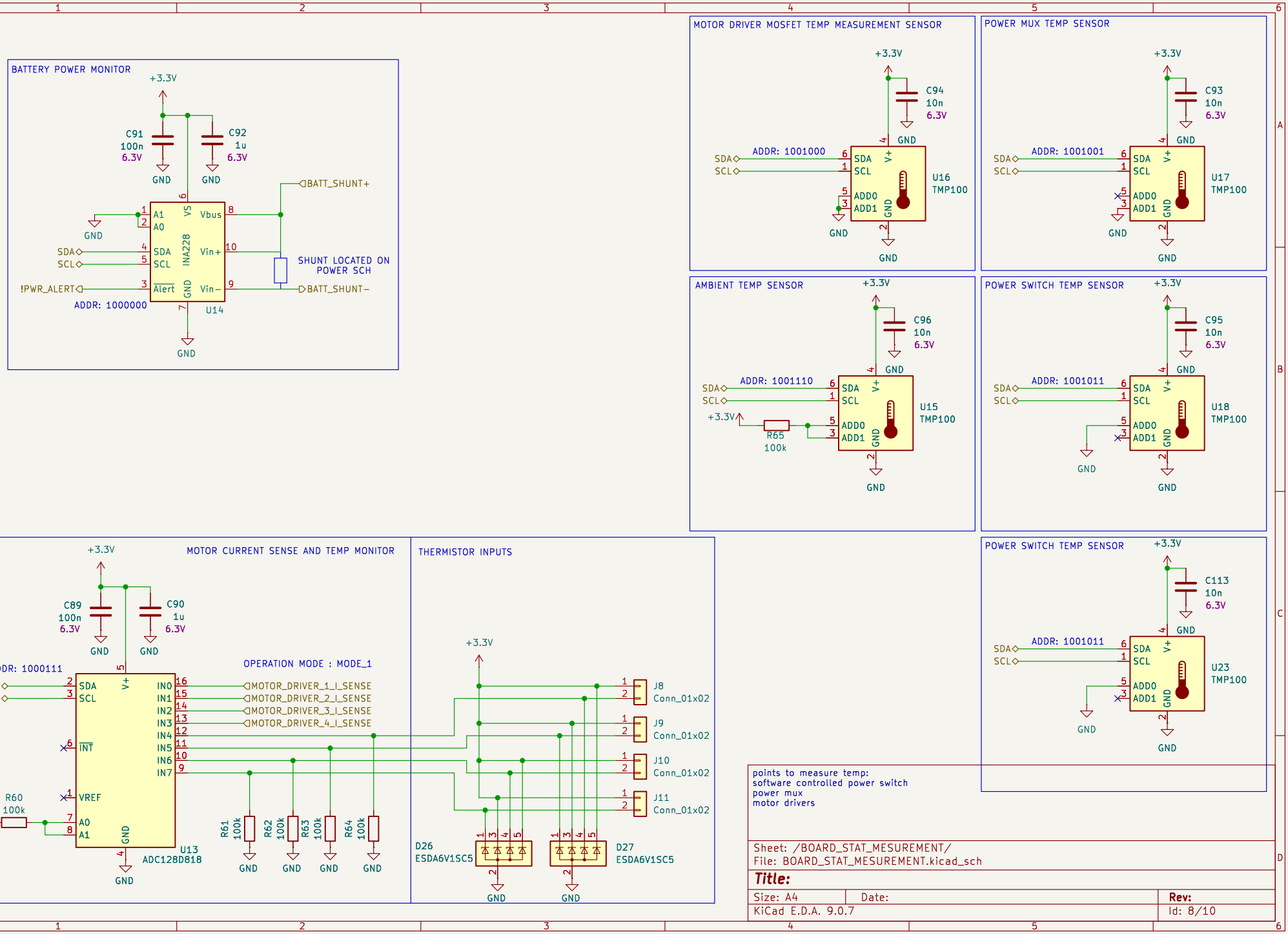
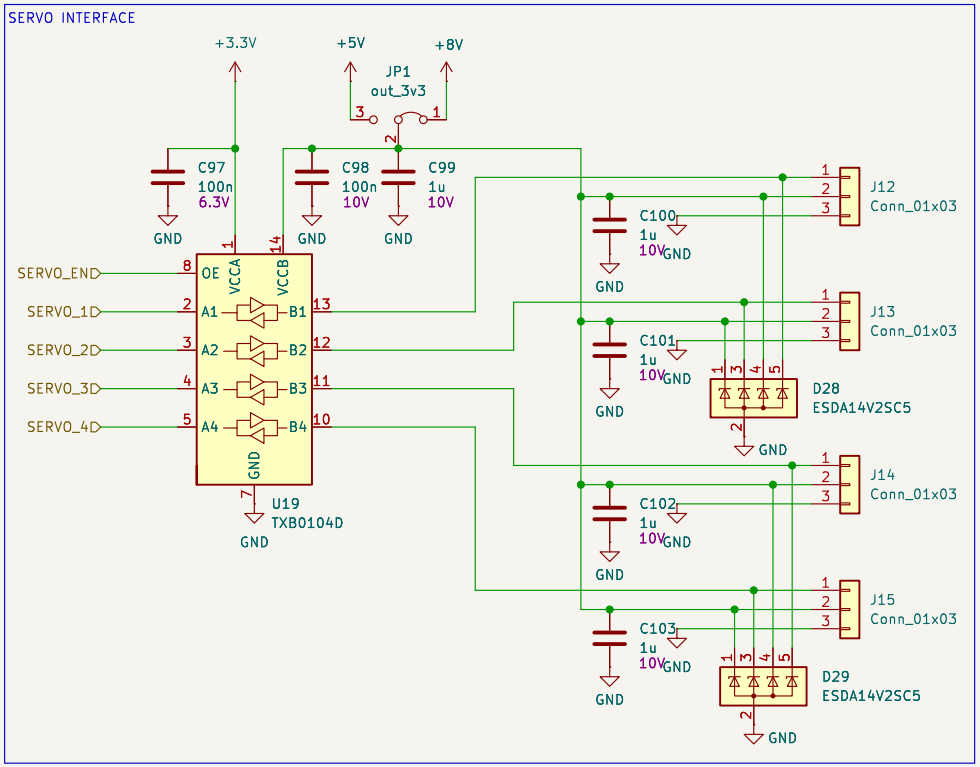
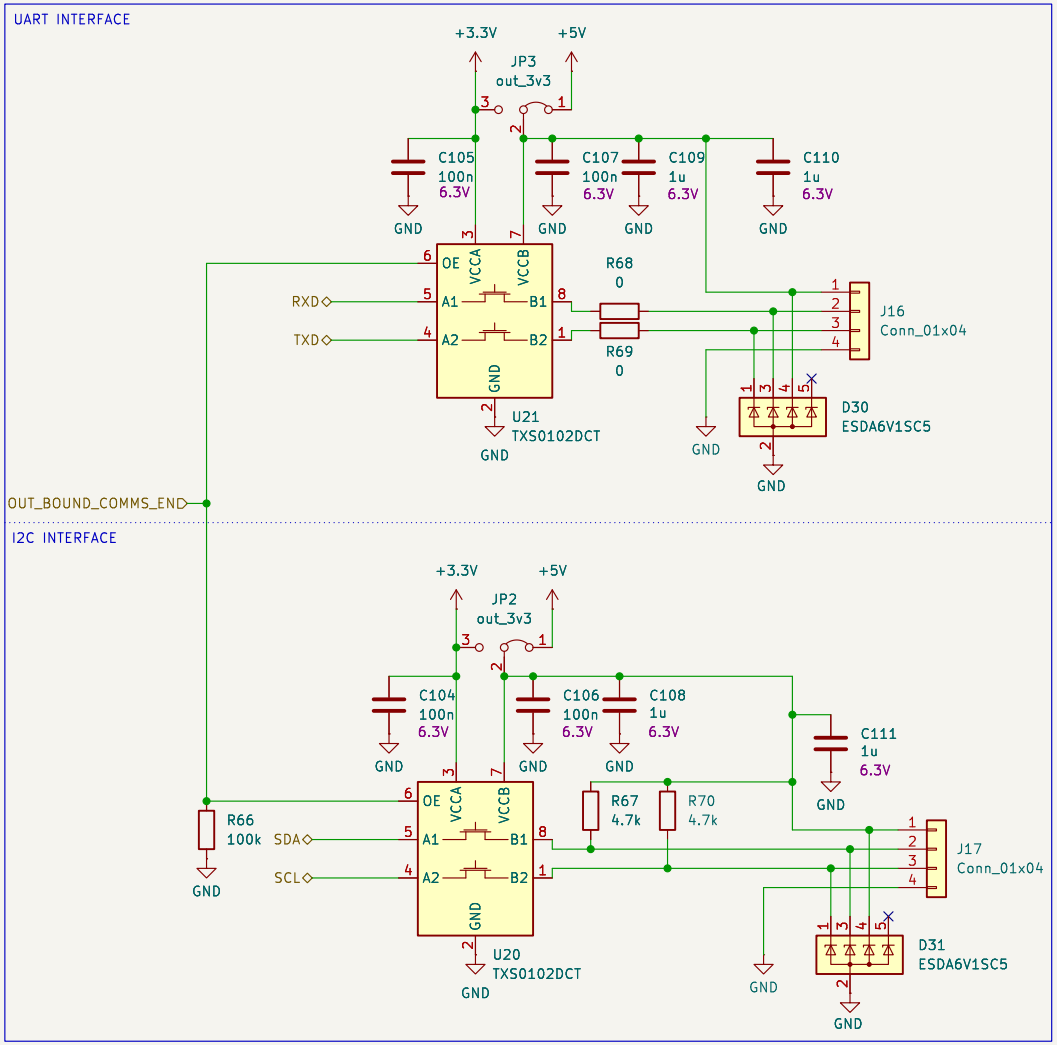

Component Class: MOTOR_DRIVER_IC_MOTOR_DRIVER4
MOTOR_DRIVER_FETS_MOTOR_DRIVER4
VREF should be 2V if shunt is 5mOhm and we want a 20A max.
PWR_IND
C86 1u 50V
C87 22u 25V
C88 150u 35v
CAN SEE UP TO 12V
C85 100n 16V
U12
VCP
CPH
CPL
VM
GND
DVDD
AVDD
VREF
1v98
DRV_3V3
C82 1u 6.3V
C83 1u 6.3V
R54 47k
R55 33k
C84 1u 6.3V
ENABLED
PHASED
SENSEOUT
EN
PH
SO
GH1
SH1
GL1
GH2
SH2
GL2
SP
SN
NMOS Q13
NMOS Q14
NMOS Q15
NMOS Q16
M4 Motor
R58 33k
nSLEEP
IDRIVE
R59 5m ±50ppm/C
RED-Toby
D24
D25
R56 180
R57 180
SNSOUT
nFAULT
TI DRV8701ERGER
IDrive dictates the current to the gate of mosfet, NC means 150ma source and 300ma sink.
Sheet: /MOTOR_DRIVER4/
File: MOTOR_DRIVER.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. 9.0.7
Id: 7/10


BATTERY POWER MONITOR
+3.3V
C91
100n
6.3V
C92
1u
6.3V
GND
BATT_SHUNT+
A1
A0
SDA
SCL
Alert
VS
Vbus
Vin+
Vin−
INA228
SHUNT LOCATED ON
POWER SCH
!PWR_ALERT
BATT_SHUNT−
ADDR: 1000000
U14
MOTOR DRIVER MOSFET TEMP MEASUREMENT SENSOR
C94
10n
6.3V
ADDR: 1001000
ADD0
ADD1
U16
TMP100
POWER MUX TEMP SENSOR
C93
ADDR: 1001001
U17
AMBIENT TEMP SENSOR
C96
ADDR: 1001110
R65
100k
U15
POWER SWITCH TEMP SENSOR
C95
ADDR: 1001011
U18
MOTOR CURRENT SENSE AND TEMP MONITOR
C89
C90
ADDR: 1000111
OPERATION MODE : MODE_1
INT
VREF
IN0
IN1
IN2
IN3
IN4
IN5
IN6
IN7
MOTOR_DRIVER_1_I_SENSE
MOTOR_DRIVER_2_I_SENSE
MOTOR_DRIVER_3_I_SENSE
MOTOR_DRIVER_4_I_SENSE
R60
100k
R61
R62
R63
R64
U13
ADC128D818
THERMISTOR INPUTS
J8
J9
J10
J11
Conn_01x02
D26
ESDA6V1SC5
D27
ESDA6V1SC5
POWER SWITCH TEMP SENSOR
C113
ADDR: 1001011
U23
TMP100
points to measure temp:
software controlled power switch
power mux
motor drivers
Sheet: /BOARD_STAT_MESUREMENT/
File: BOARD_STAT_MESUREMENT.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. 9.0.7
Id: 8/10





Sheet: /EXTERNAL_INTERFACING_DEVICES/
File: EXTERNAL_INTERFACING_DEVICES.kicad_sch

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